# PLASTIC ZIPPER AND PLASTIC BAG PROVIDED WITH THE ZIPPER

## BACKGROUND OF THE INVENTION

1. Field of the Invention

**[0001]** The present invention relates to a plastic zipper which is to be used as an opening portion of a plastic bag and a plastic bag provided with the zipper.

2. Description of Related Art

**[0002]** A plastic bag 1 shown by Figs. 3a and 3b is conventionally known. The plastic bag 1 is made by the following processes. A material film 2 is folded in double so that the turn-around portion will be the bottom of the bag 1. Then, the double film is fused at side portions a and is cut at the fused portions a, or the double film is cut at the portions a by fusion. In this way, a bag 1 with an upper opening portion 3 is made.

**[0003]** In the opening portion 3 of the bag 1, a plastic zipper 5 is provided. The plastic zipper 5 comprises a groove 7 formed on a base tape 6 and a ridge 8 formed on another base tape 6, and the groove 7 and the groove 8 are capable of engaging with and disengaging from each other. The base tapes 6 with the groove 7 and the ridge 8 respectively are fused on the inner surface of the bag 1 at the opening portion 3.

**[0004]** When opening the portion 3, the user picks the film 2 of the bag 1 at the portion 3 (which will be hereinafter referred to as flaps 4) by finger and pulls the flaps 4 away from each other. Because the tops of

the flaps 4 are on the same level, it is difficult and troublesome to pick the flaps 4 by finger.

**[0005]** A way of solving this problem is, as shown by Fig. 3b, cutting one of the flaps 4 off at the alternate long and short dashed line X so that the tops of the flaps 4 will be on different levels. In this case, if printing is made on the film 2, it is easy to distinguish the longer flap 4 and the shorter flap 4 from each other, and it is easy to open the bag 1 by pushing the inner side of the longer flap 4 by finger.

**[0006]** However, if the flaps 4 are transparent or if the zipper 5 is located at almost the top end of the opening portion 3, it is difficult to distinguish the longer flap 4 and the shorter flap 4 from each other and the outer sides and the inner sides of the respective flaps 4 from each other.

## SUMMARY OF THE INVENTION

**[0007]** An object of the present invention is to provide a plastic zipper which is to be employed in an opening portion of a bag, the zipper being of a structure which enables a user to pick an opening portion of a bag from inside easily.

**[0008]** Another object of the present invention is to provide a plastic bag which has an opening portion which can be picked from inside easily.

**[0009]** In order to attain the objects, according to a first aspect of the present invention, a plastic zipper comprises a groove formed on a first base tape and a ridge formed on a second base tape, the groove and the ridge being capable of engaging with and disengaging from each other.

At least the first base tape and the second base tape are colored differently, and at least a dimension from the groove to one side of the first base tape and at least a dimension from the ridge to one side of the second base tape are different from each other.

**[0010]** According to a second aspect of the present invention, a plastic bag which is made of a plastic film and which has an opening portion on one side comprises a zipper which is provided on an inner surface of the plastic film of the opening portion, the zipper comprising a groove formed on a first base tape and a ridge formed on a second base tape, the groove and the ridge being capable of engaging with and disengaging from each other. At least the first base tape and the second base tape of the zipper are colored differently, and at least a dimension from the groove to one side of the first base tape and at least a dimension from the ridge to one side of the second base tape are different from each other. Also, the first base tape and the second base tape are located such that an upper side of the first base tape and an upper side of the second base tape are on different levels.

**[0011]** The plastic zipper according to the first aspect of the present invention has base tapes of which at least dimensions from their respective groove and ridge to their respective one sides are different from each other. By providing the plastic zipper on the inner surface of an opening portion of a plastic bag, the base tapes can be used as flaps which are of different lengths. Thus, a step can be made in the opening portion of the plastic bag. Further, at least the first base tape and the second base tape are colored differently (or the first base tape including the groove and the second base tape including the ridge may be colored

differently), and thereby, the longer flap and the shorter flap can be easily distinguished from each other. Consequently, the user can open the plastic bag easily by pushing the longer flap on the inner surface.

## BRIEF DESCRIPTION OF THE DRAWINGS

**[0012]** These and other objects and features of the present invention will be apparent from the following description with reference to the accompanying drawings, in which:

Fig. 1 is a sectional view of a plastic zipper according to the present invention and a plastic bag provided with the zipper;

Fig. 2 is an illustration which shows opening of the plastic bag; and

Figs. 3a and 3b are a perspective view and a sectional view of a conventional plastic zipper and a plastic bag provided with the zipper.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

**[0013]** Preferred embodiments of a plastic zipper and a plastic bag according to the present invention will be described with reference to the accompanying drawings.

**[0014]** Fig. 1 shows a plastic bag 20 provided with a plastic zipper 10. This plastic bag 20 is made of a material film 21 basically by the same processes as the manufacturing processes of the plastic bag 1 shown by Fig. 3. The plastic bag 20 has an upper opening portion 22.

**[0015]** The zipper 10 comprises a groove 12 formed on a base tape 11

and a ridge 13 formed on another base tape 11, and the groove 12 and the ridge 13 are capable of engaging with and disengaging from each other. The groove 12 and its base tape 11, and the ridge 13 and its base tape 11 are respectively made by extrusion molding integrally, and are colored differently. For example, one is blue-colored, and the other is red-colored or white-colored. Any color combination is possible as long as the colors are distinguishable from each other.

**[0016]** The coloring is implemented by mixing a pigment in a plastic material. The groove 12 and its base tape 11, and the ridge 13 and its base tape 11 may be colored, or only the base tapes 11 may be colored by adopting bicolor extrusion molding.

**[0017]** The base tapes 11 are of different widths A and B. More specifically, a dimension A1 from the groove 12 to one side of the base tape 11 and a dimension B1 from the ridge 13 to one side of the base tape 11 are equal, but a dimension A2 from the groove 12 to the other side of the base tape 11 is longer than a dimension B2 from the ridge 13 to the other side of the base tape 11.

**[0018]** The zipper 10 is fused onto the inner surface of the opening portion 22 such that the dimensions A2 and B2 are located upper. Also, if the zipper 10 is positioned such that the upper sides of the base tapes 11 are respectively on the same level with the upper sides of the plastic film 21 of the bag 20, the upper portions of the base tapes 11 with the dimensions A2 and B2 respectively serve as flaps 23a and 23b. In this case, a step (of a difference C) is made between the flaps 23a and 23b.

**[0019]** The flaps 23a and 23b with the dimension A2 and the dimension B2 respectively are the base tapes 11 of the zipper 10, and the

colors of the flaps 23a and 23b are different from each other. Thereby, the lengths of the flaps 23a and 23b, and the inner surfaces and the outer surfaces of the flaps 23a and 23b can be easily distinguished from each other. As Fig. 2 shows, the user picks the longer flap 23a by the fingers of one hand and pushes the flap 23a outward (in the direction shown by arrow "Y"). Meanwhile, the user picks the shorter flap 23b by the fingers of the other hand. Thus, the flaps 23a and 23b are pulled in the opposite direction and thereby separated from each other. In this way, the opening portion 22 can be put open, and the groove 12 and the ridge 13 can be disengaged from each other.

Other Embodiments

**[0020]** The zipper 10 may have two grooves 12 and two ridges 13 arranged in two rows so as to ensure the airtightness of the bag 20.

**[0021]** In the embodiment above, the zipper 10 is positioned such that the upper side of each of the base tapes 11 is on the same level with the corresponding upper side of the plastic film 21 of the bag 20. However, the upper portions of the respective base tapes 11 may protrude from the respective upper sides of the plastic film 21. Also, the lower portions of the base tapes 11, that is, the portions with the dimension A1 and the dimension B1 are not necessarily required to be equal to each other. For example, the dimension B1 may be equal to the dimension A2, and the dimension A1 may be equal to the dimension B2.

**[0022]** Although the present invention has been described in connection with the preferred embodiment above, it is to be noted that various changes and modifications are possible to those who are skilled in the art. Such changes and modifications are to be understood as being

within the scope of the present invention.